

# MEMORANDUM

FOR THE

CHAIRMAN OF THE SANITARY COMMITTEE,

TO ACCOMPANY A

MAP OF THE SANITARY DISTRICTS

OF GLASGOW.

BY THE

MEDICAL OFFICER OF HEALTH.

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NOVEMBER, 1865.

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# MEMORANDUM FOR MR. URE,

WITH

## MAP OF SANITARY DISTRICTS OF GLASGOW.

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GLASGOW, *October 28, 1865.*

THE Map herewith sent shews forth the result of a plan which I have for sometime had in view, of subdividing the City of Glasgow into districts, constituted strictly with a view to Sanitary purposes. The details of the sub-division have been mainly worked out by Dr. M'Gill, to whose ample experience and local knowledge I have been constantly so much indebted, and whose care and accuracy in executing the present work (like all else that he takes in hand) can hardly receive too strong and warm an acknowledgment.

The principle of the sub-division is not very dissimilar from that which has been applied by Dr. Littlejohn in the City of Edinburgh, and which is so ably expounded and turned to account in his late admirable Sanitary Report. There is, however, one difference between Dr. Littlejohn's plan and mine, viz.,—that he has evidently not made it an object to preserve any approach to a relation between the districts as regards population; whereas I have aimed, among other objects, at having the whole of the districts requiring special Sanitary superintendence so divided, that in seasons of emergency they may be placed under the charge of individual medical officers, district inspectors, &c., with some degree of convenience and consistency, as parts of a system. The possible approach of cholera appeared to me a sufficient reason for pushing on this important Sanitary measure during the present autumn; but I should not wish it to be supposed that the Scheme is only useful for emergencies. On the contrary, my intention is to adopt it as a regular part of the working of our Sanitary system; and to pre-

sent, from time to time, information founded on this plan, of which even the present brief and hasty sketch, drawn up at Mr. Ure's request, may perhaps give some idea to those interested in Sanitary matters.

The object of the Scheme may be described as threefold, viz.:—

1. To obtain the means of rapidly and surely bringing the whole city, or any part of it which may demand such precautions, under house-to-house visitation and medical superintendence during emergencies ; as, for instance, during the prevalence of cholera, or other very severe and fatal epidemics.

2. To obtain the means of watching thoroughly and usefully, even in ordinary seasons, the progress of epidemic diseases (and especially typhus fever) not only in the city at large, but in detail.

3. To furnish a basis for the useful and practical analysis of the vital statistics of the city, as furnished to us from the Registrars' offices.

It was with this last view that I proposed a plan, in January, 1864, not very different in principle from the present, and fully explained in Appendix III. to my Report of that date. The explanation there given will apply, with slight alterations, to the Scheme now proposed ; but the complexity of the former plan, arising from the great number of the subdivisions, appeared on careful consideration to be a serious difficulty in the way of its adoption ; and it was therefore laid aside until a simpler one could be devised, upon the basis of a gradually ripening information as to the habitual seats of epidemic disease.

In the present Scheme the city is divided into 54 Sanitary districts, embracing about 1000 enumeration-districts, as constituted at the census of 1861. A portion of the city which is beyond the parliamentary boundary, but within the operation of the Police Act, is included in these 54 districts, and their sum of population, therefore, cannot be made to correspond with the population of the city in the published statistics of the Registrar-General. This discrepancy is unavoidable ; but it will not affect the results of comparative analysis of the districts.

Of the 54 districts, several are entirely composed of populations requiring very little detailed Sanitary supervision. One of these, the north-western district, which I have called Blythswood and

Woodside, is very fortunately placed so as to give, within certain limits of exception and explanation, the materials for a healthy standard of comparison. This district, therefore, has been made as comprehensive as possible, in order to present a large basis for comparative analysis, and its population, numbering 27,796 in 1861, is three or four times as great as that of most of the other districts. By including in any inquiry along with this immense district a few others, such as the districts named St. Matthew's, Cranstonhill, Kelvinhaugh and Lancefield, Kingston, Abbotsford, Bellgrove (including Dennistoun), Bell's Park, Exchange, and even some of the better districts of Calton and Bridgeton, as St. James', Greenhead, and Newhall, it would be possible at any time to obtain a statistical aggregate of the most varied kind as regards locality, which would be chiefly composed of the classes having moderate death-rates, and living in circumstances on the whole favourable to health. With this as a basis of comparison, inquiries could be readily instituted into the causes of excessive death-rates in such districts as Tron, Drygate, Havannah, Garngad, and other districts known to be inhabited chiefly by populations of an opposite character; while intermediate districts, such as Tradeston, Brownfield, Springbank, Barrowfield, St. Rollox, would afford results variously modified, and tending in many different and curious details to elucidate the dark mysteries of the worst districts. I believe that the mere names given above as characterising some of the districts laid down in the map, will at once suggest, to those most familiar with the localities, the fruitful nature of the data which may be expected to spring from such a comparative analysis.

Let us see, for example, what can be made without going too far into details, or resting too large conclusions upon limited data, of the examination of the cases of typhus fever reported in a single year, 1864, to the Sanitary department. I find that in the great district of Blythswood and Woodside, with 27,796 inhabitants in 1861, there were only 51 cases of fever reported during 1864, or at the rate of 1·8 in each thousand inhabitants. In the neighbouring district of Kelvinhaugh and Lancefield, the reported cases of fever were 3·3 in each thousand inhabitants during the same period; and in several other districts in the most opposite quarters of the city, the rate of fever invasion, as reported, either did not much



exceed, or fell short of, some part of the best west-end districts ; some of these comparatively favoured districts, too, being in immediate proximity to districts which suffered heavily from fever. Against the accuracy of these figures, there is no doubt to be set the fact, that in these districts the population was to a great extent of a highly respectable, if not wealthy class ; and that a considerable number of cases might therefore altogether escape being reported, from their having been attended exclusively by private medical men at their own houses ; but all medical experience goes to show that cases so attended would be mostly isolated, and would not multiply in such numbers as very greatly to increase the apparent epidemic rate of fever in the general community. I am willing, nevertheless, to make large allowance for the source of fallacy here alluded to, and it may perhaps be eliminated from consideration at present, as follows :—In 12 of the 54 Sanitary districts,\* I find a fever-

\* These twelve districts, having reported rates of fever invasion varying from 1·8 to 7 in each 1000 inhabitants, are named as follows :—1. Blythwood and Woodside. 2. Kelvinhaugh and Lancefield. 3. Cranstonhill. 4. St. Matthew's. 5. Cowcaddens. 6. Bell's Park. 7. Exchange. 8. Greenhead. 9. Kingston. 10. Portland (Laurieston). 11. Greenside. 12. Hutcheson. Of these, the first four comprise the greater part of the "west-end" within the bounds of police, and form an aggregate of 52,336 inhabitants, with 178 reported fever cases in 1864, or (allowing for increase of population) probably less than 3 in 1000 inhabitants. No. 5, a district of 9062 inhabitants, closely adjoining a district to the north having a great amount of fever, has what, under these circumstances, I regard as the remarkably small fever rate of 2·9 in each 1000 inhabitants. No. 6, the high-lying and respectable district north of Cathedral Street, has 6269 inhabitants, and a reported rate of only 2·2. The business district of the Exchange is rated at 7 in 1000 inhabitants; the east-end district of Greenhead at 5·4 in 1000. The four southern districts, Nos. 9 to 12, comprise almost the entire middle-class population of the south side of the river, (excluding the lower part of Gorbals and Hutchesontown); these four districts have an aggregate population of 29,151, and a fever-rate of 3·6 in 1000 inhabitants. It is remarkable that the Greenside district, comprising the streets between the Caledonian South-Side Station and the worst part of the Gorbals district, is not, apparently, unfavourably affected by the proximity of the latter, having a rate of only 1·8 in 1000, or exactly the same as the great west-end district of Blythwood and Woodside. The details, indeed, of the returns before me convey most distinctly the impression that the security of a district, or street, is not much affected by the state of the adjoining districts, if its population is exempt in other respects from the predisposing causes of fever. Thus, the district of St. Ninians, with a fever rate of 21·4 in 1000, fails to infect that of Greenside, separated only by a street; and the district of North Cowcaddens, comprising the worst part of the Milton district, with the very high fever-rate of 22·5 in 1000, is in immediate relations with the Cowcaddens district, the fever-rate of which, as above stated, is less than that of the west-end taken as a whole. The conclusion would appear to follow that the internal state of a district is of much more importance than its surroundings; and even, perhaps, that the latter are of little consequence, when there is not very direct intercourse between two adjoining districts.

rate, as reported, of not more than 7 in each thousand inhabitants ; the sum of population in these 12 districts in 1861 was 109,124, and the sum of fever cases in the period specified above was 403. But this last number, relating as it does to the year 1864, in all probability corresponds to a population much increased since 1861, and which it would not be too much to estimate at 120,000, or between a third and a fourth of the entire population of Glasgow within the boundaries of police. Now, as the reported fever-rate of this vast population, dispersed over various quarters of the city, was less than 4 in 1000 on the whole, and as no district of the 12 had a reported fever-rate of more than 7 in 1000 during 1864, it can hardly be a very violent assumption that any district of Glasgow in which the reported rate during 1864 was above 10 in each 1000 inhabitants, must be regarded as subject to influences having a tendency to favour, locally, the spread of epidemic fever ; influences, therefore, which it is the business of a wise policy to investigate, and if possible remove. Let me give a few additional data founded on this assumption.

I shall first compare with these 12 favoured districts of the city, the great district of Tradeston on the south, and those of Calton Church and Claythorn in the centre of the Calton district. The first of these, with the large population of 12,153, had 148 reported fever cases in 1864, being at the rate of 12·1 per 1000 ; and even with this high fever-rate, Tradeston may be considered as holding a middle position among the districts south of the river. The other two districts taken together, viz.,—Calton Church and Claythorn districts, containing a population of 11,224, had 127 reported fever cases in 1864, being a rate of 11·3 per 1000 ; and this rate, so much in excess of the 12 districts above mentioned, was actually the minimum fever-rate in the whole great registration-district of Calton, with the exception of the population in the neighbourhood of Great Hamilton Street and Monteith Row.

In the following Sanitary districts of the Central, Eastern, and Southern quarters, the fever-rate, as reported, was between 12 and 15 for each 1000 inhabitants in 1864 :—Greyfriars, Charlotte Street, Greenvale, Newhall, and Little Govan.

In the following districts, the fever-rate was between 15 and 20 for each 1000 inhabitants :—Cheapside (Anderston), Sawmillfield, Townhead, Balmanno Brae, College, Blackfriars, Dovehill, St.

Andrew's, Bridgegate and Wynds, Old Wynd, St. Luke's (Calton), Fordneuk (Bridgeton), Gorbal's Church, and Crown district (Gorbals). In most of the above districts the causes of the excess are sufficiently apparent, in a general tendency to the over-crowding of working-class populations.

In the district of Barrowfield (Bridgeton), and the notorious district of the Havannah and New Vennel, the epidemic rate of fever in 1864 was, in each, between 20 and 21 in 1000 inhabitants. It is to be observed that considerable attention had been paid to the Sanitary condition of the latter district since 1863, in the direction of various improvements in detail, with a general ticketing and police inspection of the houses; and it is probable that otherwise its rate would have been even higher. In Barrowfield, the excessive rate is mainly due to some very ill-constructed and over-crowded dwellings, well known to the Sanitary staff, in Orr Street, Broad Street, and at the end of Canning Street.

In the very crowded district of Tontine (bordering on the High Street and Trongate), and in that of North Cowcaddens (including several narrow ill-ventilated lanes and over-crowded portions of Milton Registration District), as well as in St. Ninian's Sanitary District (including the most crowded part of Gorbals), the rate of fever invasion was from 21 to 23 in 1000.

We now approach the maximum rates, which, as they are sufficiently striking to stand apart, I shall place below in a rising series, with such brief explanations as seem required.

In the well known district of Drygate, extending from Duke Street to the Necropolis (even *after* the purgation of the notorious Rookery) the fever rate was 26·5 in 1000.

In the extremely densely populated district of Tron, between the Saltmarket and King Street, the rate was 26·9 in 1000.

In the district of Garngad, covering a larger space than most of the others, and with the comparatively small population of 4649, there were no less than 153 cases of fever in the year 1864, being at the rate of 32·9 in each thousand inhabitants; and by far the greatest proportion of this enormous epidemic prevalence of fever arose in and around Middleton Place, a locality only too notorious for houses of the worst possible construction.

These facts are only a selection from those now before me as to the relative pressure of epidemic fever in different parts of Glasgow.



I have purposely related them in such a manner as to avoid all over-refined distinctions, or conclusions not justified by the evidence.

But knowing as we do from a vast accumulation of facts in the hands of various observers, that typhus fever of a certain degree of intensity and persistence *invariably* points to deficiencies of house accommodation, or great structural defects accompanied by over-crowding, as its cause; looking also to the fact that probably more than one-fourth of the population of Glasgow had during the year 1864 (when fever was epidemic) a much smaller proportion than 10 in each thousand inhabitants attacked with fever, we may surely argue not unfairly, that wherever the epidemic rate exceeded this, *there must have been serious, and probably quite remediable, defects in the domestic arrangements of the populations affected*; and, if so, it follows conclusively from the facts before me, that during the four years' epidemic fever which is not yet extinguished among us, many thousands, or rather tens of thousands, of persons have been exposed to sickness and to mortality of an avoidable kind, to a degree measured by the differences between (say) 6 or 7 in 1000 on the one side, and 33 in 1000 on the other. I think there will be found in these remarks, and in the details of the districts as indicated in the map, a sufficiently clear justification of the noble project of re-construction lately submitted by the Lord Provost to the municipality. But, as the facts before me will, ere long, admit of being much more completely and satisfactorily stated, on the basis of three complete years' experience of epidemic fever since the Sanitary Department was organised, it is my intention, at as early a date as possible after the close of the present year, to frame a report founded on these more extended data, for the purpose of assisting the authorities in this good work.

Typhus fever, however, is not the only disease which can be advantageously studied as regards its local distribution, by means of Sanitary Districts. The Registrars' returns afford the means of submitting the mortality from many diseases—from all other epidemics, from diarrhoeal diseases, from consumption and other diseases of the lungs, from infantile diseases, &c., after a time to the same kind of analysis. It can hardly be doubted that a systematic examination of the deaths for five or six years from any

of these causes, arranged according to Sanitary Districts, would lead to results of great importance as regards prevention.

This, I need scarcely say, is necessarily a task for the future; it will require great care in examining and classifying details, and repeated examinations, at intervals, of the facts accumulating from week to week in the Registrars' returns, at present comparatively unfruitful and void of interest. It is not my wish to raise expectations which may be only partially fulfilled; but to attempt, at least, something in this direction, commencing with January, 1866, is part of the plan I have in view.

It remains to be added that the possible advent of cholera, and the necessity which would thence arise for systematic house-to-house visitation, has been steadily held in view in planning these 54 Sanitary Districts. Each of these may be generally described as an aggregate of from 12 to 20 enumeration districts, having a population, speaking generally, of from 5000 to 9000 persons of all ages, and accurately corresponding with the boundaries of enumeration-districts adopted and carefully recorded by the late Dr. Strang at the time of last census, the records of which are fully preserved in the books of the City Chamberlain. Transcripts of these records, in convenient forms, are now being made for the use of the Sanitary Office, and in the event of a necessity arising, they will be used as the basis of a district medical superintendence on the plan of a daily house-to-house visitation of epidemic localities. The sanitary districts in the parts of the city epidemically affected, would thus become separate centres of organisation of medical relief, subject to the general superintendence of the Sanitary Medical Staff. It would be of no public advantage, however, to pursue in this memorandum the details of a Scheme in regard to which my most earnest hope is that it may not require, for a long time to come, to be brought into operation; and I only allude to it now with the view of giving an assurance that the subject has received, and will receive, most careful consideration as part of the general scheme of sanitary districts.

W. T. GAIRDNER.



